AMSAT News Service Weekly Bulletins
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AMSAT NEWS SERVICE
ANS-348

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor(a)amsat.org

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see:
http://www.amsat.org/mailman/listinfo/ans

In this edition:
* AMSAT-BB has migrated email server
* Launch Window for AMSAT’s RadFxSat-2 / Fox-1E Opens December 19th
* Robots Dominate Space News This Week
* SpaceX's Starship SN8 soars on test launch with explosive landing
* The Great Conjunction is Coming on December 21, 2020
* Changes to AMSAT-NA TLE Distribution for December ##, 2020
* ARISS News
* Upcoming Satellite Operations
* Hamfests, Conventions, Maker Faires, and Other Events
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SB SAT @ AMSAT $ANS-348.01
ANS-320 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 348.01
>From AMSAT HQ KENSINGTON, MD.
DATE 2020 December 13
To All RADIO AMATEURS
BID: $ANS-348.01

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below. Please contact postmaster(a)amsat.org with any questions or concerns regarding this upgrade.

Procedures to to sign up for the new Mailman service were sent to all AMSAT-BB subscribers. Please read the PDF attached to the email. Matt, KM4EXS adds this reminder in a follow up email: Please use the "Sign Up" option, using the email address that you use for your subscriptions. That process will link the "new" account to all your existing subscriptions. You can then set your digest preferences as you like.

[ANS thanks Matt Alberti / KM4EXS / AMSAT-IT Volunteer for the above information]

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+After 19 hours of drilling and scooping samples, Chang’e 5’s ascent vehicle spring-launched and then blasted off, returning to lunar orbit carrying ~2 kg of regolith. It successfully rendezvoused with the return vehicle, transferred the sample, and the return vehicle has embarked on its multi-day return trip. These will be the first lunar samples returned since the 70s and the first sample return mission for China. The rendezvous of the ascent vehicle and the return segment used microwave radar that was accurate down to 0.1° and able to lock on to a circle with a 3.33 cm radius.

+The cost to train deep neural networks is decreasing at 50x Moore’s Law, leading many to believe that machine learning, while very much in its infancy, will see many more space applications in the near future. Cutting edge applications, such as making autonomous decisions because throughput or speed-of-light delay prevent humans from doing so, have already been demonstrated, and more are on the horizon.
[ANS thanks The Orbital Index for the above information]

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https://www.amsat.org/amsat/ariss/news/arissnews.txt

[ANS thanks Charlie Sufana, AJ9N and David Jordan AA4KN, of the ARISS operation team mentor group for the above information]
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bring broadband service to some 5.2 million unserved homes and businesses in rural parts of the United States.

(ANS thanks SpaceNews.com for the above information)

+ SpaceX launched its upgraded Cargo Dragon spacecraft on Dec. 6. Based on Crew Dragon (basically stripped of seats, life support equipment, abort motors, and navigation interfaces), this was their 21st commercial ISS resupply mission. This version of Cargo Dragon is certified for five flights compared to its predecessor's three, and it conducts automated docking instead of Canadarm-captured berthing.

(ANS thanks The Orbital Index for the above information)

+ There may still be time to participate in the last part of the 2020 Open Source CubeSat Workshop. The workshop provides a forum for CubeSat developers and CubeSat mission operators to meet and join forces on open source projects. The focus of this year's workshop is on sharing of ideas and open collaboration, even when confined at home. The target audience is academia, research institutes, companies, and individuals. The event takes place 12 and 13 December, 13:00 - 17:00 UTC each day: https://events.libre.space/event/4/

(ANS thanks Libre Space Community for the above information)

+ Surprisingly clear videos of the Arecibo Observatory collapse are now available, one from a drone that was actively inspecting a cable during the event and the other from a camera in the control room. A detailed frame-by-frame analysis is available at: https://www.youtube.com/watch?v=59WQIRvezzI

(ANS thanks The Orbital Index for the above information)

+ GEOMAGNETIC STORM December 10, 2020
A coronal mass ejection (CME) occurred heading for Earth early in the week., and geomagnetic storms were forecast to occur when it arrived on December 9th and 10th. NOAA forecasters downgraded their possible G3 warning. Unfortunately for Skywatchers, auroras that were could originally thought possible as far south as Illinois and Oregon were not seen farther south than the northern tier. On the other hand satellite surface charging issues and HF propagation have remained unaffected without the blackouts typical of these disturbances. An interesting discussion of the reasons for this "non-event" is on Dr. Tamitha Skov's YouTube/Patreon channel at: https://bit.ly/38113ce

(ANS thanks Spaceweather.com and Dr. Skov for the above information)

+ Next Rocket Lab launch delayed due to weather
Due to weather over the range this week at LC-1 RocketLab are now targeting no earlier than Monday, 14 December UTC for #TheOwlsNightBegins mission. Terry ads in a follow up note: "There is a solar eclipse on Monday that may affect the mission so the launch is delayed until Tuesday."
See: https://twitter.com/RocketLab/status/1337329320876904450

Target lift-off: UTC | 09:00 - 10:59

(ANS thanks Terry Osborne, ZL2BAC for the above information)

+ Samples of asteroid Ryugu arrive in Japan after successful Hayabusa2 capsule landing on Dec. 5
Japanese scientists are thrilled to finally have asteroid samples arrive Monday (Dec. 7) after a long flight from Australia — and a

much longer journey through the solar system.
An aerial shot of the Hayabusa2 return capsule and parachute after its landing on a bush in the Woomera Prohibited Area, Australia. Those rocks originate on a near-Earth asteroid called Ryugu; the Hayabusa2 spacecraft snagged them in 2019 before a yearlong journey to deliver them to Earth in a small sample-return capsule. The capsule landed on Dec. 5 in the Woomera Prohibited Area in South Australia, creating a stunning fireball in the pre-dawn skies. Japanese scientists on site successfully tracked down the capsule and collected the precious cosmic delivery to begin the final leg of its journey. See additional information and photos at: https://bit.ly/379wPnV

(ANS thanks Meghan Bartels and Space.com for the above information)

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73 and Remember to help keep amateur radio in space,
This week's ANS Editor, Jack Spitznagel, KD4IZ

kd4iz at amsat dot org